



May 4, 2009

John McKenzie
Environmental & Resource Management Division
San Luis Obispo County Planning and Building Department
976 Osos Street, Room 200
San Luis Obispo, CA 93408

RE: Project Amendments and Response to County letter of January 27, 2009
California Valley Solar Ranch (High Plains Ranch II, LLC) Conditional Use Permit
Location: 13505 Carrisa Highway (Highway 58), California Valley
Planning Number DRC2008-00097

Dear Mr. McKenzie:

This letter describes project amendments and provides responses to the County's letter of January 27, 2009 concerning the California Valley Solar Ranch (CVSR) project. The project amendments described in this letter are designed to resolve environmental impacts identified in our ongoing conversations with resource agencies and the local community.

We are pleased to offer the following amendments to the California Valley Solar Ranch project description:

1. A revised and custom drawing of the proposed T-20 Tracker hardware is now included on Sheets E1.0 and E1.1 to reflect the customized version of the T-20 Tracker that has been specifically designed for the slopes present at the project site. While this is not a change in plans as we had dimensioned previous tracker exhibits in the plan set with actual planned dimensions we have not had design drawings for the specific hardware until recently. Typical site slopes are up to 5% so the trackers will be modified to position the panels at a 15% angle in relation to the ground instead of the normal 20% angle (as in T-20). Optimal design angle for the site is 20%.
2. Concrete tracker ballasted foundations have been replaced by a Low Impact Penetrating foundation design (LIP Foundation). The new foundation design will entirely replace the

original foundation design removing approximately 80 acres or 200,000 concrete ballast concrete foundations from the permanent disturbance area of the project (reducing the permanent ground coverage of the project by approximately 40%). As part of making this change we did extensive corrosion studies to insure that steel foundations could be installed on the sites corrosive soils. The updated foundation design will require detailed engineering analysis to determine the best combination of foundation elements. The final design will take into account site soil conditions, project layout and slope conditions. The foundation system will utilize a combination of three mounting systems: ground screws, helical piers and/or I-Beams. Avoiding the use of the ballasted foundation will remove a concern raised by the California Department of Fish and Game in their comment on the projects Notice of Preparation (March 3, 2009) commenting on the potential for the ballasted foundation system to create impacts on the San Joaquin Kit Fox, a State and Federally listed Endangered Species.

3. Array areas have been shifted slightly to minimize utilization of areas requiring significant grading. This will reduce grading impacts associated with project development. Array 8 was expanded into an area was originally thought to contain vernal pools. Vernal Pool Habitat Assessments in March 2009 showed the area to be free of vernal pools and allowed the redesign of Array 8 and the removal of trackers from areas over 5% slope in the other arrays that would have otherwise had required significant grading. We can provide cut and fill estimates for the grading avoided by making these adjustments for use in the project EIR. Please see the revised Sheet set for the boundaries of the revised array areas.
4. With the change to the Low Impact Penetrating foundation design and associated potential minor changes in the overall tracker design to accommodate the LIP foundation design we would like the maximum number of Trackers permitted under the project application to be increased by 10% from a maximum of 80,000 trackers within the permitted area to a maximum of 88,000 trackers. This would raise the power density of the project and support the goal of generating more PV power output from each acre of land. We are not asking for an increase in the permitted area beyond the original application or beyond what is reflected in the updated application described in this letter and its attachments.
5. Due to the natural terrain of the site, some areas may require the use of shorter array rows. The intent of the use permit application is to make these detailed variations in row length adjustments at the time of final engineering design and for the variation to be accommodated within the specified regulated boundaries of the array areas. Final design will look at the specific topography of each array row to determine the best design solution for the topography.
6. The project's permanent interior road system (labeled as Fire Access Roads in revised Sheet C3.0) has been redesigned to reduce their total length from 29.25 miles to 14.5 miles. This reduction reduces required grading, the need for base rock and reduces

overall environmental impacts. Some of the roads that are being deleted from the original application will be instead be utilized on a temporary basis during construction and will be treated to reduce erosion and dust emissions using an APCD soil stabilizer during the construction period. Post construction these “Access Drives” (See Sheet C3.0) will be left open for emergency access and biannual panel washing access. They will not be otherwise utilized for access purposes by CVSR staff and will be disked and reseeded. This design change reduces the area utilized for project roads from 85.1 acres to 42.1 acres. In addition to reducing the area of permanent disturbance it reduces the need for the cuts necessary to create an area for the installation of aggregate base. Since the site is not balanced this reduces by tens of thousands of tons of materials that must be transported to the offsite soil salvage area. We will also be reconstructing approximately 3 miles of California Valley subdivision roads adjacent to the site in lieu of building parallel duplicative roadways.

Quantitative Changes to Road Network

Item	Length (ft)	Width (ft)	Area (acres)
January 14, 2009 Plan			
Fire Access Roads (Agg. Base)	154,442	24	85.1
		Total	85.1
May 4, 2009 Plan			
Fire Access Roads (Agg. Base)	76,441	24	42.1
Off-site Access Roads (Agg. Base)	15,474	24	8.5
		Total	50.6

7. The Summit Overlook visitors’ viewing facility has been eliminated in order to further reduce grading impacts. Visitors will still be able to view the array from the Sunset Overlook, located northeast of the Visitors’ Center and the Sunrise Overlook on the east side of the property.
8. The water supply well and tank have been also been relocated in order to reduce grading and increase the elevation of the tank as necessary to provide gravity-fed hydrants for Cal Fire use. Please see revised Utility Plan for the water well and tank location (See Sheet C5.0). We have consulted with the Cal Fire and water system revisions are designed to meet their requirements. Fire hydrants will be located in the final improvement plans consistent with requirements of Cal Fire.
9. A gasoline storage and dispensing plan will be developed in order to allow for more efficient on-site refueling of construction, operations and maintenance vehicles. (CUPA Business Plan to be filed through the San Luis Obispo County Environmental Health Department prior to the start of construction). Sheet A1.0 will be revised to included the location of a gasoline storage tank of up to 2000 gallons to the south of the O&M building in order to support permanent operations (this is a tentative sizing based on 3-6 months of fuel for O&M uses). This revision will be submitted by June 1, 2009. Please

find attached a product specification sheet for the typical type of fueling facility we proposed to incorporate as a permanent element of the project. During the construction phase a fueling truck will service construction equipment with no permanent fixed fuel tanks or drums on the property (beyond the gasoline storage tank referenced above).

10. Site fencing has been redesigned with traditional 4-wire ranch fencing (See Sheet L2.0 and L2.1). This will allow for maximum permeability for small mammals and other area species. The fencing will be placed around the perimeter of the site which is approximately 80,000 linear feet in length. Along the 22,000 linear foot frontage of SR-58 we will repair and retain the existing fencing to the extent feasible.
11. Two alternative transmission line corridors and accompanying access road alignments are outlined in the updated application. The existing alignment included in the original application materials (Submitted January 14, 2009) is now referred to as Option A. A second alternative (Option B) has also been included for re. The routes are optimized to minimize the number of transmission towers and site them in a manner to reduce visual impacts especially as the line crosses SR-58. The two towers on either side of the highway are 280 feet from the nearest fence line. The span crossing the highway is maximized with the resulting tower heights controlling the final span length across the road. Proposed tower locations are shown for reference and to validate the also to validated the engineering feasibility of this route option. (See Sheets E4.0 and E4.1)
12. A surface mine will be developed on a parcel owned by Rowland and Catherine Twisselman (APN: 072-074-007) to the northwest of the switch yard location as shown on Sheet R1.1 in order to produce aggregate base for the project. The mine will allow materials to be trucked a much shorter distance to the CVSR site and for only a very short distance on public roadways (SR-58). This mine component will be served by the roadway to be constructed as part of the transmission line corridor Option A or Option B (discussed above). Additional road improvements will be necessary from the switchyard area northwest to the surface mine location. The surface mine has been used to date as a borrow pit to provide road base materials for the extensive ranchland holdings of the Twisselman family. The surface mine will be included in the SunPower EIR, but will be processed as a separate application for a Use Permit and Reclamation Plan. The application is in preparation and will be submitted to the County by June 1, 2009. Detailed design has been pending the preparation of a one foot contour map for the surface mine site.
13. The CVSR's transformers (both across the site and in the substation) will utilize an environmental friendly cooling fluid product known as [Envirotemp FR3](#). FR3 fluid is a soy-based (food grade), fire-resistant fluid and is PCB-free. FR3 fluid is the **only** non-silicone fluid that meets both the National Electric Code (NEC) and National Electric

Safety Code (NESC) standards for less-flammable formulation as well as the UL listing requirements for use in electrical transformers (EOVK listing). Envirotemp FR3 fluid is also the **only** dielectric fluid to meet the strict quality control for optimum transformer cooling characteristics and offer additional advantages such as the highest flash/firepoint, best environmental profile, extended transformer insulation life, increased performance, and lowest cost. Normal industry practice is to use mineral oil based transformer fluids that are classified as hazardous materials.

Responses to your letter of January 27, 2009

1. With regards to the array fences, it appears the atypical design may be In part to retain some wildlife movement. If that is the case, please provide additional information that supports the basis for the design, and what species are being targeted (e.g., kit fox, etc.).

The site fencing has been redesigned with standard 4-wire "ranch fencing", which will be located around the site perimeter. The previous fence design and placement around the individual arrays has been superseded. This new design is intended to permit maximum wildlife movement across and through the site. The substation and switchyards areas have standard chain link fencing topped by barb wire.

2. Regarding botanical resources, given the submitted report was prepared out-of-season, will you be having URS prepare 'in season' reports during the Spring and Summer, or are you expecting these supplemental reports to be prepared by the EIR consultant?

We have consulted with the California Department of Fish and Game and US Fish and Wildlife Service regarding biological surveys that will need to be prepared to support endangered species incidental take permits under ESA/CESA and CEQA. A list of planned and in process surveys is attached.

3. Please clarify if any Corp of Engineer permit will be requested. If yes, please describe. If not, please explain how you envision impacts to federally endangered species to be addressed/permitted at the federal level.

A permit application will be submitted for a US Army Corps of Engineers Clean Water Act Section 404 permit and SunPower will be providing information to the USACOE to support their Endangered Species Act consultation with the United States Fish and Wildlife Service. SunPower has already begun discussing the Endangered Species Act related issues with the Service.

4. Please identify how hot the panels will get for an average summer day at its peak temperature as well as for an average winter day? Please discuss the amount/rate of heat gain/loss from the panels and concrete anchors, as well as to the shaded area below the panels; also, estimate the increase and decrease in temperatures when compared to the unaffected surrounding ambient air temperature.

Normal Operating Condition Temperature (NOCT) for SunPower solar panels is 20 degrees Celcius above ambient temperature, and so for a typical summer day at 40 degrees C results in panel temperatures of approximately 60 degrees C. SunPower uses a model to predict module temperature, and in turn module efficiency, which accounts for irradiance, wind, and module type. This model when applied to a T-20 Tracker system during a typical year in Dagget, CA shows summer time peak module temperatures between 65 and 70 degrees C and winter typical peaks between 35 and 40 degrees C.

A panel with 1200 W/m² irradiance incident will typically reflect 120 W/m² and produce 180 w/m² of electrical energy, and so dissipate 900 W/m² as heat. This is comparable to the amount of energy dissipated as heat by typical desert ground surfaces with a reflectivity of 20%. Experience shows that modules are hot to the touch, but do not noticeably affect the temperature of the surrounding area. With the convection in a T-20 Tracker system, temperatures below trackers are nearly the same as ambient temperatures in the ordinary shade. We are not using the ballasted foundations so there is no impact to discuss regarding that previous project element.

5. Given that the shaded area below the solar panel will likely create a microclimate that is cooler with moister conditions, and may introduce non-native plants, is anything being proposed to control the growth of plants in the shaded areas?

The shade from the tracker moves from west to east over a day, leaving all ground shaded for at least some portion of the day. This dynamic shade limits the variation in microclimate beneath the trackers. Also, the SunPower installation at Nellis Air Force Base in Nevada has not shown any change in growth patterns below the trackers or change in species composition under the array.

It is unlikely that the solar panels will create a microclimate that is significantly cooler with moister conditions that may introduce non-native plants and increase their growth on the site. Please see the temperature related discussion in response to Question 4 above. Although several academic papers have been written that found this effect in more arid climates we do not believe these findings can be generalized to the CVSR site. Factors that set this project apart from the Mojave Desert studies include the design of the CVSR and the largely non-native vegetation already growing on the site. The CVSR solar panels do not permanently shade the ground. At Noon only 25% of the Array area will be shaded or less than 12% of the entire site. During the course of the day as the panels rotate to track the sun the shaded area moves across the site. Much of the array area is already dominated by non-native grasses which we identify as the California Annual Grasslands plant community in the Biological Survey Assessment Report filed as part of the CVSR application. The California Annual Grassland habitat is characterized by an

assortment of native and nonnative annual species of highly variable composition. Over most of the CVSR site a substantial majority of the habitat is non-native grasses.

Given the dominance of non-native species it is difficult to imagine how delaying the seasonal drying of the soil horizons by a few days could create any substantial change in plant communities or serve to further promote already dominant non-native plant communities.

The management of the site is a major issue for SunPower as we want to promote the restoration of ecosystem values that are friendly to the San Joaquin Kit Fox and other native plants and animals. Because of this we have retained Paul Kephart of Rana Creek Environmental Consulting and Mark Stromberg, Ph.D., Resident Reserve Director of the University of California's Hastings Natural History Preserve. Mr. Kephart is an acknowledged ecosystem restoration practitioner and Mr. Stromberg is a restoration ecologist with a research focus on California grasslands. Mr. Stromberg is the coauthor of California Grasslands: Ecology and Management, Berkeley, CA: University of California Press, 2007.

The consulting team will be charged with advising SunPower on vegetation management related issues including how sheep grazing might be used to manage vegetation on the property in support of native plant restoration (and the control of any excess plant growth from incidental shading), review our Draft Revegetation Plan to insure the establishment of achievable goals for revegetation after construction on the site, advise us on how we could enhance and restore the grass land habitat values within the array area and help us develop habitat restoration plans and practices to enhance the property as a whole.

6. Please explain how the rodent populations will be controlled on the site. Left unchecked, they will burrow under all of the footings and could undermine them relatively quickly. Since the panels are fixed to the footings, what process will be used to return the panel to the optimal angle? Please also describe the process to be used to re-level the panels subsequent to a large earthquake or initial settling of soil.

Concrete ballast foundations are no longer proposed for the CVSR. Our proposed Low Impact Penetrating (LIP) foundations will not be affected by burrowing rodents. We do not expect to need to re-level the LIP foundations as all supports will be placed in native soils and should not be subject to settling.

A damage assessment would be necessary after a large earthquake to assess the best plan of action for restoring the facility. SunPower will be designing the CVSR to reduce structural damage that could result from a strong earthquake on the adjacent San Andreas Fault. The LIP foundation system will be designed to be more earthquake resistant than the ballasted foundation system.

7. Please provide noise-generation information for all construction and operational equipment that generates loud (more than 45 dBs at 50 feet) noise (e.g., heavy construction equipment, concrete batch plant, loud assembly work, transformers, inverters, tracking

motors, etc.); please discuss nighttime maintenance activities as it relates to noise; please discuss expected construction activities to occur prior to 7 am and after 7 pm.

SunPower utilizes standard construction equipment and expects that noise-generation information will be gathered and analyzed by the County's environmental consultant based on the approved scope of work which includes a noise analysis of construction related noise.

Installation of the LIP tracker foundations will require a variety of specialized equipment. Depending on final design and installation locations on the property foundation may require the placement of up to 15 foot long foundation elements. Screw placement rigs have been demonstrated onsite with a potential vendor which utilizes Bobcat sized equipment and generates low noise levels. Noise levels were not measured during the demonstration process. In certain locations depending upon foundation and slope conditions and final site specific engineering calculations it is expected that steel I-Beams may need to be installed to meet engineering specifications. SunPower is currently reviewing vibratory drivers for placement of these elements. We will work with the County and Aspen Environmental if it is determined to be necessary to set up field tests of this type of installation equipment for noise measurements purposes.

The application includes a list of equipment that is expected to be used on site. SunPower is currently constructing the largest solar photovoltaic power plant in the U.S., a 25-megawatt plant in DeSoto County, Florida. We will be updating our equipment list based on this experience.

During the installation period, the application description proposes onsite job hours from 6:00 am - 6:00 pm. In regards to the department's question, no construction is expected to occur after 7:00 pm. Early morning starts are very valuable in hot arid environments and that is why we propose to start construction as early as 6:00 am. Normal maintenance activities will not occur at night.

Traffic/hazards

8. Please provide some decommissioning/maintenance details, such as how often replacement occurs for the various elements (e.g., solar panels, transformers, inverters, etc.), as well as their disposal (e.g., percent recyclable, how much is considered hazardous waste, etc.).

Maintenance: The CVSR will require minimal replacement of panels and equipment. There will be an occasional broken tracker or solar panel that may need to be replaced. Inverters currently require replacement approximately every decade.

Decommissioning: Basic materials predominate in the project design with large amounts of glass, aluminum, concrete and steel. The temporary covered assembly buildings will be removed from the CVSR site and be available for use at other SunPower projects. Concrete is the principal material used in the project that may not be economical to recycle because of its low value and the sites distance from markets. Concrete use has been substantially reduced with the move

towards the LIP foundation system. Most of the remaining concrete is concentrated in foundations for the drive motors and inverters. The solar panels (modules) are warranted by SunPower to our customers for 25 years and are expected to still have significant salvage value at the planned end of life of the CVSR. It should be noted the Carrizo Plain ARCO Solar project site has been entirely decommissioned and returned to agriculture. Many of the panels from the ARCO Solar project are still in use with new owners. We have a more detailed financial analysis in preparation that we will provide to the County by June 1, 2009.

9. Please specify amount of aggregate needed for roads/concrete work and identify potential locations to obtain materials.

We will have detailed calculations on required aggregate materials available later in May, 2009. Our redesign to reduce roadways and the deletion of 200,000 concrete ballasts has substantially reduced quantities necessary. Aggregate base will be produced nearby. High quality aggregates for concrete production will be sourced locally or brought in from Kern County.

10. Please specify how much export material is expected and if it will be placed outside of project boundaries; if outside project boundaries, please specify destination(s).

We will have detailed calculations on expected excess fill material available later in May, 2009. Our redesign to reduce roadways and to expand Array 8 so as to take trackers off of hills that would have required substantial grading. Excess fill from removing top soil to allow placement of aggregate base in roadways is planned to be hauled to the proposed Twissleman

11. Regarding construction workforce, please explain what incentives will be offered to insure the shuttle will be used? Will there be any on-site temporary housing for any of the workforce? Or an on-site area to park RVs or trailers?

Under the California Labor Code we cannot require as a condition of employment the use of the planned employee shuttle system without paying the hourly workforce for travel time. This would increase project labor costs by over 20% and is not feasible.

The CVSR is in a remote location and there are no commercial establishments in the area that would require the use of car to access either at lunch or after work. We propose to offer the financial incentive of a free or reduced price lunch to SunPower and contractors employees who use the shuttle. We will commit to a requirement in the project conditions of approval that will require 75% of employees during the construction phase of the project to utilize the shuttle (based on a weighted average over a calendar quarter). We will implement a permit system (if necessary) to restrict onsite parking to assist in reaching this goal and will work with the Highway Patrol to limit parking in accord with State law along the SR-58 CVSR frontage.

We have decided against offering any on-site temporary workforce housing including any on-site areas for parking Recreational Vehicles or trailers because of potential compliance issues with

the State Housing Law. We have not been able to clearly identify all of the State regulatory requirements that might apply to this project element and are not interested in further considering this issue.

Water

12. On washing of solar panels, please specify if only water will be used, or if any other cleaning agent may be used to supplement this cleaning effort; please discuss if washing efforts will be conducted after 10 pm or before 7 am.

Panel washing requires only water – no solvents or other chemicals. Panel washing will occur approximately once a year, during daytime hours.

13. Please identify water needs for landscaping, including specific quantities for screening purposes. Also, given the very low rainfall amounts, it should be assumed that watering of screening vegetation will likely need to continue for the life of the project.

See our response to Question # 19 below.

Air Quality

14. Please describe all construction vehicles and equipment that will generate emissions.

Please see also see Question # 7 above.

Vehicle Traffic Use	Vehicle Type	Max Weight (Lbs)	Tread Type	Qty Onsite
Grading & Travel on Main Roads	Scraper	77,800	Dual Axle	3
	Motor Grader	30,000	Dual Axle	3
	Excavator	36,000	Tractor	4
	Dozer	44,582	Tractor	3
	Dump Truck	35,000	Dual Axle	4
	Pad Drum Vibratory Roller	27,340	Dual Axle	2
Between Tracker Rows	4000 gallon water truck	53,220	Triple Axle	6
	Concrete Trucks	46,000	Triple Axle	6
	Backhoe Loader	13,046	Dual Axle	2
	Truck mounted crane	28,800	Dual Axle	4
	Grade-all	10,000	Dual Axle	4
	Flatbed trucks w/ Precast Concrete Foundations	60,000	Triple Axle	4
	Trencher	5,500	Dual Axle	3
	Light Weight Trucks	6,000	Dual Axle	50

15. Please identify if standby power (e.g., generator) will be needed. If yes, please explain.

A 45 kW propane powered standby generator will be installed east of the O&M building along with its propane fuel tank (See Sheet A1.0). The generator sizing will probably be reduced during our detailed design phase. We have attached specification and mounting diagrams for the generator. In addition we anticipate the use of approximately 20 small gasoline generators to power welding machines to assemble trackers and for use in the field to construct tracker arrays.

Visual

16. With regards to signage, is any lighting proposed to highlight sign? If yes, please describe.

Directional lighting will backlight the entry monument sign. See Sheet L2.2 for the cut sheet for lighting fixtures and the detailed plans for placement of the lighting in relationship to the signage.

17. Please clarify "nighttime lighting for security purposes" - will this be limited to shielded lighting around the O&M and visitor center, or will there be additional lighting (e.g., lighting along walking trails, etc.)? Please provide details including location, types and heights. Please explain all construction and operational activities that may be conducted between dusk and dawn. Also, please discuss nighttime maintenance work as it relates to lighting requirements.

Please see Sheet A4.0 for the Conceptual Lighting Plan for the O&M and visitor center which includes a cut sheet showing fixture specifications and specific locations of full cut-off lighting fixtures in compliance with Section 22.10.060 of the San Luis Obispo County Code and Section 1006 of the California Building Code for exit lights. There will be no lighting along walking trails.

There are not planned routine operations and maintenance activities planned to occur after dark. In situations that required emergency operations because of the outage of a piece of substation equipment temporary lighting might be used. The principal O&M activity on the site will be panel washing which is planned to occur during daylight hours and routine 24 hour security patrols. These activities will not require lighting. No fixed lighting is will be installed as part of the security equipment for the project.

During the installation period, the onsite job hours will be from 6:00am-6:00pm. Management staff would be expected to be onsite both earlier and later than these job hours. In addition dependent on County requirements it might be appropriate to schedule night time deliveries to lower traffic impacts for area residents. We are open to this concept if required by the County.

For these reasons during our most intense construction periods, depending on the season and other scheduling issues, there may be a need for temporary night time lighting. Thus we would

request the use permit to allow the use of pole mounted directional generator lights across the site to support our activities as outlined above both during job site hours and during other hours to support permitted activities during the construction period and emergency situations. Specific areas where we would utilize these lights would be outside our O&M building in the yard area, and in construction areas early in the morning and in late afternoons in the winter, etc.

18. Please provide a color board for: O&M building, visitor center, water tank, collection and transmission towers. Staff would encourage the use of colors that have chroma and value ratings of 6 or darker, as measured by the Munsell Book of Color.

Color and materials boards have been included as Sheet L6.0 Landscape Material Board and Sheet A5.0 Architectural Material Board. Transmission lines, roofing material on the O&M building/visitor center, entry sign and specified fencing has been specified for rust colored Corten steel. The electrical collection lines will be standard wood power polls and will not be painted. They are not included on the color board.

19. Please discuss whether or not screening landscaping at the perimeter of the array areas will be proposed. If not, please explain why. If so, please provide on revised landscape plan and estimate the water requirements. Please note deciduous vegetation is not considered an effective type of screening vegetation.

Please note the revised landscape sheets submitted with this letter. The landscaped berms included in the original application along SR 58 have been removed from the updated application. The only landscaped area is now near the O&M center, entry monument area at the intersection of the Main Access Road and SR 58 and surrounding the Substation. The annual water requirements for landscape establishment for the materials included on the updated application are calculated as 1,823,709 gallons/year (5.6 acre feet/year). The substation screening will require approximately 514,000 gallons/yr. to irrigate the large trees and shrubs. The rest of the water would be used at the entry monument area and visitor center. After the landscape is established for 3-5 years the landscape irrigation usage should drop by 75%. Given these factors we have amended the water usage tables to reflect the consumption of an additional 5.6 acre feet/year during the Construction Phase with water volume dropping to 1.4 acre feet/year during the Operation Phase. (Source: Russ Johnston, SJA Landscape Architects, April 28, 2009)

20. Per LUO Sec. 22.32.060, please prepare a reflectivity analysis showing the land area that will be subject to the concentrated reflective aspect of the project as the summer and winter sun angles reflect off of the rotating solar panels. The ordinance identifies concentrated reflections should be avoided for occupied structures, recreation areas or roads.

This analysis is being prepared as part of the Aesthetics/Visual Resources Impact Assessment by Lawrence Headley & Associates and will be submitted by May 21, 2009.

21. What is the color of the temporary covered assembly area? Please provide as dark a color as functional to reduce visual impacts.

Please see the Architectural Material Board (Sheet A5.0) for the color sample locally known as “mud brown” which is identified as having a Munsell value of 0.27Y 6.42/5.65. We all also propose to paint the water tank the same color.

22. Are the proposed heights of the collection and transmission towers as low as allowable? If not, please submit revised plans with these towers reduced in height to as much is allowed.

We have redesigned the transmission tower placement and heights to insure that the towers are as low as possible. There is a tradeoff between the height of the towers and the number of towers necessary. We based our redesign based on lowering the heights of the towers to the maximum extent feasible given the full range of design parameters for the site. Lower towers also simplify construction costs and reduce the purchase price of the transmission towers. In addition we have developed Option B which would move the towers off the hillside area and onto the lower gentle slopes so as to be more visually unobtrusive. The design is also based on complying with safety requirements found in California Public Utilities Commission General Order 95 that require a minimum of 30 foot ground clearance which our design takes into account. The design assumes maximum sag conditions based on a maximum of 212deg F conductor temperature. (See Sheets E4.0 and E4.1)

Drainage/Erosion

23. Please confirm that all proposed internal roads will be at-grade per the grading detail plans.

All proposed internal roads will be at-grade. Fire access roads along the perimeter of the project will be excavated, compacted and aggregate base materials place up to the original ground level per engineering design. The finished elevation of all temporary and permanent access roads will meet and not exceed elevations of native grade. Roads will not obstruct or alter natural drainage patterns across the site.

24. With regards to drainage, please explain or have plan show how concentrated flows from the cumulative effect of straight line edge of lowest section of solar panel will be handled.

The SunPower panels that are mounted on the T-20 Tracker units are 31.4” tall by 61.4” wide. They are mounted on the tracker unit with an 11mm (5/8th inch) horizontal gap between panels as mounted facing south. Rainfall thus will not be able to run down the face of the assembled panels on the tracker from panel to panel so as to be substantially concentrated along the

southerly edge of the tracker array. During most times of day the panels will be tilted to either the east or west along the tracker's northerly axis. This will cause rainfall runoff to be dispersed by the rotating panel edge over the area under the tracker with a range of motion much like that of an oscillating sprinkler dispersing irrigation water. The erosion issue implied in the question has not been an issue in other installations even in cases with higher amounts of rainfall or where the design included substantial grading with areas of exposed soils. Many SunPower projects are built using a ground mounted fixed tilt system (T0 Trackers) where runoff is concentrated to a fixed edge and even in these cases drip line erosion has not been noted as an issue. If desired SunPower can provide detailed tracker specification for further analysis of this issue by the County.

25. *Has a SWPPP been prepared? If yes, please submit.*

A SWPPP Plan will be prepared prior to the issuance of grading or construction permits.

26. *With regards to drainage and the evolving NPDES program, what "Low Impact Design" elements are included in the project design?*

With the redesign of the array layout and the LIP foundations many of the detailed land disturbance and cut and fill calculations we have developed for the project are now out of date and along with the details of the site grading plan are currently being reworked. These will be resubmitted by June 1, 2009. Of the original 1966 acres incorporated in the development of this project, less than 100 acres will be covered with impermeable surfaces (buildings, concrete foundations, LIP foundations, etc). The balance of the site will be left untouched or will be revegetated to meet or exceed the natural drainage characteristics of the site. All access roads will have aggregate base or will be treated with an APCD approved soil stabilizer/dust control treatment to permit access in inclement weather, but not paved.

To further buffer any potential impacts due to the project, a number of drainage conveyance and retention systems will be incorporated into the development of the solar farm. Vegetated swales are strategically placed to convey storm water run-off in a protected channel to downstream areas where discharge has no impact.

27. *Erosion control plan lacks details on where and which erosion devices will be placed, especially during rainy season; also, please provide additional details (or proposed SWPPP) that address erosion control that keeps sediment from leaving the property during the construction phase.*

No Erosion Control Plan or Storm Water Pollution Prevention Plan is necessary at this time (per personal communication with Tim Tomlinson).

28. *Please provide discussion/detail on stockpiles of excess on-site native materials (e.g., how long to remain on-site, how they will be treated to prevent erosion, etc.).*

Excess cut will be disposed of in the soil stockpile being designed as part of the surface mine being evaluated as part of the EIR for this project and the location of which is identified on the Site Context Map. (See Sheet G0.1) A Use Permit and Reclamation Plan on the nearby site owned by Rowland and Catherine Twisselman (APN: 072-074-007) will be submitted to the County by June 1, 2009. The soil stockpile area will be shared with the surface mine and the materials will be transported to the mine as backhaul in association with the delivery of road base for the project.

Archaeology

29. *An archaeological surface survey was not provided. Please specify if one will be submitted, or if you would prefer it be completed as part of the EIR. If you intend to provide the report, please contact me prior to selection.*

SunPower has reviewed a proposed cultural resources Scope of Work prepared by LSA Associates with the County and the County's comments have been communicated with the contractor. We have amended the area to be surveyed to include miscellaneous additions to the project such as the transmission line corridors and construction access routes to the transmission line tower locations. The cultural resource report will be available by July 1, 2009. A copy of the revised proposal dated April 29, 2009 is attached to this letter.

Other

30. *Please prepare a Decommission Plan or provide a detailed discussion of all project elements and how they will be removed from the site and the returning of the site to existing conditions.*

We are planning the CVSR such that almost all of the project (with the exception of the water tank and buildings) can be realistically considered restorable and will be providing a financial analysis demonstrating how the residual value of the solar equipment would make it financially feasible to remove the equipment and to restore the site at the end of the project period of operations. The analysis will be based on a similar request from local authorities that was prepared for our Canadian Helios project. We will submit the analysis by June 1, 2009.

31. *Please provide soil borings and perc test for proposed leach line areas.*

The proposed leach field areas are located within an area with a depth of at least 10 feet of engineered fill. The field will be in the file high above native soils. The engineered fill will be designed to create a profile to handle the percolation of waste water effluent consistent with all County and Regional Board regulations. We will be submitting required design information and testing for the site after we select an engineer to design the system.

32. *Please discuss ADA compliance of proposed visitor center, public trails and overlooks.*

We have added an ADA accessible path of travel to the Sunset Overlook site as well as an ADA compliant parking area. The visitor center will also be ADA compliant. (See Sheet L4.0)

33. *Please specify if visitor center will be used for any other activities not specific to the Solar Ranch.*

The Visitors' Center will be used for educational and public outreach programs in order to familiarize the community and travelers with the CVSR, solar technology and the area in general. The visitor center will not be made available for hire or for events such as marriages or parties. The visitor center will be the second public restroom available in the Carrizo Plain and this be supportive of visitors already planning to visit the area and will support visitation to the Carrizo Plain National Monument.

34. *Please note that additional project description details may be requested as a part of the referral/ Notice of Preparation process (e.g., CalFire requiring multiple ladders to the O&M building rooftop, etc.).*

We will be pleased to offer additional information as it is requested.

Hazardous Waste/Materials

35. *Given the corrosive nature of the soils, will the metal portions of the equipment receive any initial or ongoing special treatments once installed?*

SunPower has completed comprehensive corrosion studies over the past 60 days in support of our redesign of the project to utilize the proposed Low Impact Penetrating (LIP) foundation system. We have not completed detailed engineering design but believe site conditions will require certain steel foundation elements to be thicker to allow for corrosion over time and the projects steel foundation elements will be treated with epoxy coatings. It is unclear whether this coating would be applied on site as part of the construction or offsite by the manufacturer. Cathodic protection is not being planned.

36. *With regards to hazardous material storage, please provide a list for both construction and operational phases; please provide more detailed description of the "best management practices" to be used for storage.*

We will provide a list of hazardous materials anticipated to be on-site for both the construction and operational phases and storage best practices by June 1, 2009. One of the issues in

assembling this information is the difference in scale between existing facilities and the proposed facilities. In addition it needs to be kept in mind that SunPower builds commercial, industrial and utility projects that are anticipated to need very little operational and maintenance attention and thus the hazardous materials list will be short. For example the physical plant at our Nellis Air Force Base installation, the largest crystalline PV installation in the hemisphere has one O&M representative who with other duties spends most of his time giving tours of the facility. At 15MW the facility has been in operation since December 2007 in a desert environment and has yet to require panel washing.

Please also explain if the construction materials will be kept in one place during the entire construction period or moved during construction.

Installation of the Solar Ranch will occur in three phases, each phase lasting less than one year. The phasing is related to both construction and the associated issues related to construction materials handling. Please see page 36 of the project narrative submitted with the original application materials for a detailed discussion of these issues in a section titled "Installation Phases" as well as Sheet C2.0 – Phasing, Temporary Construction Access and Staging Area Plan for a graphic representation for the areas that we have identified to support construction and material handling in each of the array areas.

37. Please either prepare a spill response plan or provide details on how hazardous materials, wastes would be contained in the event of a spill.

We will provide the Spill Response Plan based on our Canadian Helios project by June 1, 2009.

Additional Project Information attached:

- List of Biological Surveys being prepared by URS (see schedule with status and expected completion dates attached).
- An amended plan set that should replace in their entirety the previously submitted plan set. Do not continue using Sheets from the original set as the numbering has changed. For simplicity we are replacing the entire set. Grading sheets and slope analysis will be distributed separately (see details below).
- Recently completed water well information for the site (Well Test Report, Well Completion Report and Water Testing Results).
- Product specification sheets for a typical above ground fuel facility as proposed for the CVSR.
- Product specifications sheets and installation information for a 45 kW propane powered emergency backup generator as proposed for the CVSR.
- Cultural Resources Assessment Proposal prepared by LSA Associates, April 29, 2009.

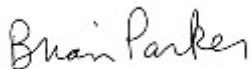
Additional Project Information to be submitted by June 1, 2009 or other specified dates:

- Additional Plan sheets related to the updates in the grading plan related to the changes described in the letter (including Sheets G1.2, C4.0-4.9 and L5.0).
- Amended Viewshed Exhibit (Sheet A3.0) to reflect the new LIP foundation system.
- Sheet A1.0 will be revised to include the location of a gasoline storage tank.
- Aesthetics/Visual Resources Impact Assessment by Lawrence Headley & Associates
- A Use Permit and Reclamation Plan for a Surface Mine to serve the CVSR on the nearby site owned by Rowland and Catherine Twisselman (APN: 072-074-007).
- CVSR decommissioning financial analysis.
- Listing of hazardous materials anticipated to be stored on-site during the construction or operational phases, a description of storage best practices and a Spill Response Plan.
- An updated set of statistics describing disturbed areas, cut and fill amounts.
- An edited project narrative to match amendments described in this submission and items to be submitted by June 1st.
- Biological Surveys being prepared by URS will be submitted according to the schedule of expected completion dates attached.
- Cultural Resources Assessment Survey report being prepared by LSA Associates for submittal by July 1, 2009.

Closing

We look forward to working with you and the Department over the course of the next year to review this project and take it through the public hearing process. Please feel free to call me anytime we need to talk about questions or concerns. It is a large and complicated project and we are continuing to perfect the design to make the project more efficient and have less environmental impacts. Together we can make this a project that will make San Luis Obispo proud.

Sincerely,



Brian Parker
North America Utility Business Unit
SunPower Corporation, Systems
510-487-5494 cell
510-431-4651 office

Attachments

California Valley Solar Ranch

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California Valley Solar Ranch

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cc: Jean Wilson, SunPower Corporation
Paul MacMillan, SunPower Corporation
Deepa Ananthakrishnan, SunPower Corporation
Logan Granger, SunPower Corporation
Ellen Carroll, County of San Luis Obsipo
Vic Holanda, County of San Luis Obsipo
Christy Gabler, North Coast Engineering
Larry Werner, North Coast Engineering
John Davis, URS
John Larson, URS

**SCHEDULE OF ADDITIONAL
BIOLOGICAL SURVEYS
FOR THE
CALIFORNIA VALLEY SOLAR RANCH PROJECT
(Revised May 1, 2009)**

Survey Types	Survey Specifics / Notes	Status
Pre-CUP Application		
Habitat Assessment	Reconnaissance-level habitat suitability surveys for special-status species	Completed in April 2008
*Small mammal Trapping	Trapping for special-status and common small mammal species using 320 Sherman traps over 16 trap lines / completed prior to project layout	Completed in July 2008
Wetland Delineation	USACE Methodology, Arid West / completed prior to project layout	Completed in August 2008
Post-CUP Application		
Vernal Pool Habitat Assessment	Assessment of Potential Listed Vernal Pool Branchiopod Habitat	Completed in March 2009
Wintering and Special-Status Bird Species Surveys	Accepted transect / point count methodology.	Completed in March 2009
Listed Vernal Pool Branchiopod Surveys (wet season)	Inundation ("pooling") not observed on-site during winter of 2008-2009.	NA
Wetland Delineation	USACE Methodology, Arid West / entire project site including transmission routes	Completed in April 2009
Focused Floristic (Rare Plant) Surveys and vegetation mapping	USFWS, CDFG, CNPS guidelines	In progress, expected to be completed in June 2009
Blunt-nosed Leopard Lizard (Adult Surveys)	CDFG guidelines	In-progress, will be completed by July 15
San Joaquin Kit Fox	USFWS/CDFG 1999 Guidelines	Scheduled to occur in May and June 2009
**San Joaquin Antelope Squirrel Surveys	CDFG	Scheduled to occur in May and June 2009
**Western Burrowing Owl	WBO Consortium/CDFG Guidelines	Scheduled to occur in May and June 2009
Listed Vernal Pool Branchiopod Surveys (dry season), if needed	USFWS Protocol, 1996 Guidelines	NA. Pending completion of assessment submittal and USFWS coordination
Blunt-nosed Leopard Lizard Surveys (Juvenile Surveys)	USFWS/CDFG Guidelines	Scheduled to occur in August and September 2009
General Wildlife Surveys	Non-protocol observations for special-status and common wildlife species observed during focused surveys and other site visits	In-progress

* No recent sign of the giant kangaroo rat (*Dipodomys ingens*) was observed on-site. Reference populations were visited during these surveys. No focused survey are recommended for this species.

**To be completed as part of BNLL, general wildlife, and other surveys